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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/525,793	02/25/2005	Marcello Notari	266372US0X PCT	3029
22850	7590	02/06/2008	EXAMINER	
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			OLADAPO, TAIWO	
			ART UNIT	PAPER NUMBER
			4151	
			NOTIFICATION DATE	DELIVERY MODE
			02/06/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/525,793	Applicant(s) NOTARI ET AL.	
	Examiner TAIWO T. OLADAPO	Art Unit 4151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/25/2005</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 4 – 8 are objected to under 37 CFR 1.75(c) as being in improper form because they cannot depend from any other multiple dependent claim. See MPEP § 608.01(n).

Accordingly, the claims 4 – 8 have not been further treated on the merits.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

4. Claim 9 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In claim 9 the formulas I and II require variables R and R', which have not been defined by the claim. Claim 9 is an independent claim and therefore each and every limitation of the claim must be defined within. It appears that applicants have attempted to define R and R' with the recitation of “R, the same or different, and R', also the same or different, have the meanings illustrated above.” However said recitation does not define R and R' since R and R' each have at least two separate definitions in the preceding claims. For purposes of examination R and R' are taken as described in claim 1.

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5. Claims 1 – 4, 7 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Claims 1 – 4, 7 provides for the use of mixture as solvent or fuel, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

7. Claims 1 – 4, 7 are rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. Claims 1 – 3, 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Renga (WO 93/09111)

10. In regards to claims 1 – 3, 7 Renga teaches a **solvent mixture** (page 2 lines 30 – 31: glycerol carbonate esters and their *use in reducing the viscosity of surfactants*. Solvent mixture

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is surfactant and glycerol carbonate ester) [according to applicants specification page 6 lines 1 – 3: a solvent can comprise the glycerol carbonate ester mixture alone, or can be further mixed with water and surfactants], comprising **one or more alkyl esters of fatty acid having formula I and one or more esters of fatty acids of glycerol carbonate having formula II** (page 3 lines 30 – 40, page 4 lines 1 – 2: products are formula I and formula II with R group having from 1 - 22 carbons), **esters of fatty acids of glycerol carbonate are present from 10 to 40%** (page 8 lines 29 – 30: glycerol carbonate ester of caprylic acid about 25%), **use as conventional industrial solvent** (page 2 lines 30 – 31).

11. Claims 1, 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Sturwold (US 4,885,104)

12. In regards to claims 1, 8, Sturwold teaches **solvent mixture** (column 7 lines 11 – 15: lubricants of this invention can be used with carrier or diluent. The prereacted fat/oils are commonly *blended* with a suitable *solvent*, carrier or base oil) comprising **alkyl esters of fatty acids having formula I** (column 4 lines 41 – 50; column 5 lines 15 – 20: methyl ester of carboxylic acid *having from 2 to 36 carbon atoms*) and **one or more esters of fatty acids of glycerol carbonate having formula II** [According to applicant's disclosure, esters of glycerol carbonate are esters found in rapeseed oil, palm oil, cotton seed oil etc: see applicant's specification page 4 lines 13 – 20] (Sturwold, column 4 lines 22 – 25: fat or oil is selected from *palm oil*, peanut oil, *cotton seed oil* etc), **solvent composition comprising mixture of ester formulated together with water and surfactants** (column 7 lines 61 - 64: lubricant composition constitute dispersion or *emulsion*: column 8 lines 1 - 5: emulsifying/dispersing agent

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will primarily depend on the amount of water used, triglyceride being used). An emulsion is a mixture of **surfactant**, water and oil.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

15. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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16. Claims 4 – 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Renga (WO 93/09111) in view of Tateno et al. (EP 1126011)

17. In regards to claim 4 – 6, the teachings of Renga in §7 above are hereby incorporated herein. Renga does not necessarily teach fuel mixture comprising alkyl esters of fatty acid and fatty acid esters of glycerol carbonates in **diesel cycle engines**, or **mineral gasoil**. Tateno teaches fuel mixture comprising esters of glycerol carbonate (title: process for producing fatty acid esters and *fuels comprising fatty acid ester*), [0009: *fatty acid alkyl esters and glycerol*], [0016: typical examples of oil or fat include *rapeseed oil*, *palm oil* etc], **fuel for diesel cycle engines** [0003: processes have been described for manufacturing *fuels for diesel engine* by transesterification of an oil or fat], **fuel compositions comprising mixture of esters added to mineral gasoil** [0018: The oil or fat may contain crude oil, heavy oil, *light oil* (or fuel oil), *mineral oil*. (Gas oil is simply any hydrocarbon oil used as fuel oil especially petroleum distillates with low boiling ranges)], **fuel compositions comprising the mixture of esters and at least one additive for fuels** [0018: *detergents*]. Tateno provides a motivation for using low fatty acids of alkyl esters (such as methyl, ethyl, isopropyl esters or alkyl groups with low number of carbons) for fuels in diesel engines stating that “relatively low viscosity may cause abrasion or seizing...too high molecular weight may cause odor or smoke. Methyl, ethyl esters produce a fuel for diesel engine having high performance at a low temperature” [0060 - 0061]. It would have been obvious to a person of ordinary skill in the art at the time of the invention to combine the teachings of Tateno and Renga in order to prepare a fuel oil for diesel engine that does not cause engine seizing or smoking at a low temperature.

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18. Claims 9 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Renga (WO 93/09111) in view of White et al. (US 4,032,550)

19. In regards to claims 9 – 11, the teachings of Renga in §7 above are hereby incorporated. Renga teaches a process of preparation of a mixture comprising one or more alkyl esters of formula I and formula II, performing the reaction in the **presence of base catalyst** (page 3 lines 20 – 26: methods of preparing glycerol carbonate ester compound in the presence of a catalyst, for example, strong bases), **washing with water or aqueous acid and extraction with an organic solvent** (page 8 lines 10 – 16: crude reaction or alkyl ester mixture is washed with water and then extracted with ether), **water is extracted by means of azeotropic distillation with organic azeotrope-forming solvent** (page 8 lines 20 – 21: methyl caprylate or alkyl ester mixture was they removed by vacuum distillation. Here the mixture that was previously washed with water is extracted from water and/or any other unwanted diluent) (page 8 line 5: dimethyl carbonate is azeotroping agent), **alkyl carbonate to be reacted is dimethyl carbonate or diethyl carbonate, azeotrope-forming solvent consists of dialkyl carbonates** (page 4 lines 30 – 31: *lower alky carbonate may comprise dimethyl carbonate*). Renga does not teach **purification of mixture by means of neutralization, removal of catalyst**, or performing the **reaction in the absence of water**. White teaches process for the production of esters (title) comprising performing the **reaction in the absence of water** (column 5 lines 43 – 45: facilitate completion of reaction by removing water), **purification of mixture obtained by means of neutralization** (column 1 lines 49 – 54: there are two major problems associated with use of acidic and basic catalysts, they promote side reactions resulting in undesirable by-products and require neutralization at the completion of the reaction), **removal of catalyst** (column 9 lines 25

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– 26: virtually all the catalyst can be removed at the end of the reaction using simple filtration procedures). White teaches that neutralization, and removal of water and catalysts are necessary because the “catalysts promote side reactions therefore requiring neutralization, and [transition metal catalyst compounds] hydrolyze in the presence of water with proportionate loss of [catalyst] activity” (column 1 lines 49 – 63). It would have been obvious to one of ordinary skill in the art at the time of the invention to combine the teachings of White with that of Renga in order to prevent side reactions that would hydrolyze the catalyst and therefore require larger amounts of catalysts in order to ensure completion of the esterification process.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAIWO T. OLADAPO whose telephone number is (571)270-3723. The examiner can normally be reached on Monday - Friday (11:30-5:00) EST, ALT Friday's Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mikhail Kornakov can be reached on 571-272-1303. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

TO
/Michael Kornakov/
Supervisory Patent Examiner, Art Unit 4151